

Mind the Gap: Using Immunization Information Tools Strategically

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10 Questions on ACIP General Recommendations



Please take out a pen

Timing and Scheduling



1. The minimum interval between DTaP-3 and DTaP-4 is 6 calendar months. Cole's DTaP-4 was administered 5 days before the 6 month interval; the dose was invalid.

Which of the following is the best response to this situation?

1. Which of the following is the best response to this situation?

- A. Count the dose.
- B. Restart the DTaP series.
- C. Repeat DTaP-4 6 months after the valid 3rd dose of DTaP.
- D. Repeat DTaP-4 6 months after the invalid 4th dose of DTaP.

1. Which of the following is the best response to this situation?

- A. Count the dose. DTaP-4 does not need to be repeated if the interval was at least 4 months.
- B. Restart the DTaP series.
- C. Repeat DTaP-4 6 months after the valid 3rd dose of DTaP.
- D. Repeat DTaP-4 6 months after the invalid 4th dose of DTaP.

2. The minimum age for Varicella-dose 1 is 12 months of age. Chase's Varicella-1 was administered 5 days before his first birthday; the dose was invalid.

Which of the following is the best response to this situation?

2. Which of the following is the best response to this situation?

- A. Fire the nurse who messed this up.
- B. Only advise the mother to keep Chase away from people with chickenpox.
- C. Repeat Varicella-1 at least 4 weeks after the invalid dose.
- D. Repeat Varicella-1 asap so Chase will be protected asap.

2. Which of the following is the best response to this situation?

- A. Fire the nurse who messed this up.
- B. Only advise the mother to keep Chase away from people with chickenpox.
- C. Repeat Varicella-1 at least 4 weeks after the invalid dose.
- D. Repeat Varicella-1 asap so Chase will be protected asap.

3. Potential advantages of <u>combination</u> <u>vaccines</u> include improved vaccine coverage rates, but their use may lead to "extravaccination."

	Birth	2 mos	4 mos	6 mos
Нер В	√		✓	✓
DTaP		√	✓	✓
IPV		✓	√	✓

3. Potential advantages of <u>combination</u> <u>vaccines</u> include improved vaccine coverage rates, but their use may lead to "extravaccination."

Which of the following is NOT one of the factors that ACIP recommends considering when balancing the risks and benefits of extravaccination?

- 3. Which of the following is NOT one of the factors that ACIP recommends considering when balancing risks & benefits of extra-vaccination?
- A. Is the extra antigen contraindicated?
- B. Will VFC cover the combination vaccine if a single antigen vaccine is licensed?
- C. How reactogenic is the extra antigen? (e.g., Hib & Hep B low, tetanus –higher)
- D. Is the vaccine with the needed antigen readily available without the extra antigen.

- 3. Which of the following is NOT one of the factors that ACIP recommends considering when balancing risks & benefits of extra-vaccination?
- A. Is the extra antigen contraindicated?
- B. Will VFC cover the combination vaccine if a single antigen vaccine is licensed?
- C. How reactogenic is the extra antigen? (e.g., Hib & Hep B low, tetanus –higher)
- D. Is the vaccine with the needed antigen readily available without the extra antigen.

4. Dale is a healthy girl who had only 1 dose of pneumococcal vaccine in the first year of life. Now she is 22 months old.

Of the following, which is best for Dale?

See the sheet in your packet: Recommendations for Pneumococcal Vaccine Use in Children

4. Of the following, which is best for Dale?

- A. 1 dose now, 2 more ≥ 8 weeks apart
- B. 1 dose now, another >8 weeks from now
- C. 1 dose now (this is the last needed dose)
- D. Consider 1 dose of PCV23

4. Of the following, which is best for Dale?

- A. 1 dose now, 2 more ≥ 8 weeks apart
- B. 1 dose now, another ≥8 weeks from now
- C. 1 dose now (this is the last needed dose)
- D. Consider 1 dose of PCV23

What is a month?

- **28 days?**
- >30 days?
- >30.5 days?
- >A calendar month?

Relief is on its way, thanks to computers!

Storage and Handling



Storage and Handling or "When don't you want to be the biggest loser?"





5. The ACIP General Recommendations include a temperature log. The KS version is shown here.

Temperature Log for Vaccines (Fahrenheit) -> -> -> VFC PIN #;															
## Care order proper conditions as quickly as possible; 2. Call the vaccine manufacturer(s) to determine whether the potency of the vaccine(s) has been affected; 3. Call the Kansas immunization Program at 782-206-591 for first assistance; 4. Document the action takes in the section provided below. **Document of the proper control to the proper cont	١.	. Temperat	ure Log f	or Vaccines	(Fahrenhe	it) → →	→ VF	C PIN #:_		·····Mo	nth:		···Year:	····Day	s·1-15¶
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- 5. Which of the following is a Storage and Handling error that has been documented in several pediatric offices in KS and/or MO?
- A. Not documenting temperatures 2 times daily.
- B. Recording out-of-range temperatures, but not noticing.
- C. Recording out-of-range temperatures, but not doing anything about it.
- D. Not knowing what the appropriate temperature is even though it is on the temperature log.
- E. All of the above

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6. Which of the following is an <u>acceptable</u> vaccine storage practice?

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- A. Vaccine being stored in a refrigerator with water bottles to stabilize temperatures
- B. Vaccine being stored in a dorm style refrigerator
- C. Vaccine being stored in the crisper and/or meat drawers
- D. Vaccine being stored in a refrigerator with staff food/beverages

6. Which of the following is an acceptable vaccine storage practice?

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- D. Vaccine being stored in a refrigerator with staff food/beverages

7. If they are frozen, non-lyophilized, aluminum-adjuvanted vaccines may undergo irreversible loss of potency.

Which of the following is FINE to administer after exposure to freezing temperatures?

7. Which of the following is fine to give after being exposed to freezing temperatures?

- A. HPV vaccine
- B. Hep A and Hep B vaccine
- C. MMR vaccine
- D. PCV vaccine
- E. D, T, or P-containing vaccines

7. Which of the following is fine to give after being exposed to freezing temperatures?

- A. HPV vaccine
- B. Hep A and Hep B vaccine
- C. MMR vaccine
- D. PCV vaccine
- E. D, T, or P-containing vaccines

Other important things to remember

- No overcrowding in the storage unit
- Rotate stock when vaccines with longer expiration dates are received
- Use thermometers that are certified or calibrated and not expired
- ► Keep varicella vaccine in the freezer





Storage & Handling Horror Stories: *Gruesome Tales from the Mid-West*

Storage & Handling Horror Stories

- Revaccination due to temperature problems
- The importance of having vaccine management polices and emergency management for vaccine storage
- Staff turnover -new employee was never told that temperatures need to be documented for the vaccine storage unit. She was there for a month with no temperature documentation

MORE Storage & Handling Horror Stories

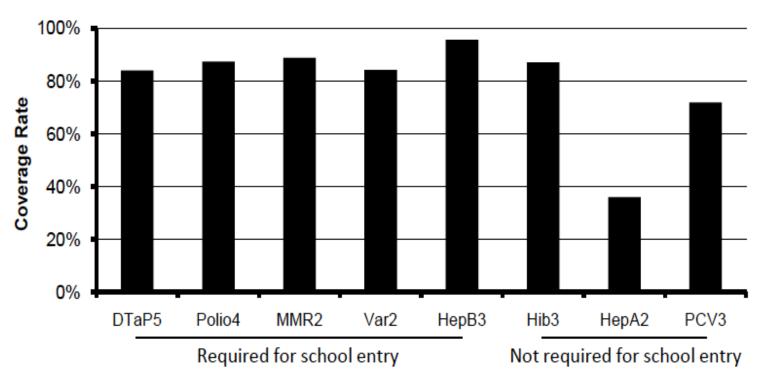
- Household refrigerator overloaded with vaccine so they stored vaccine in the door, bins and emptied the pre-filled syringes into the basket to save room
- MMR exposed to light
- ➤ Varicella transported to a school clinic and improperly stored

Learn from the mistakes of others. You can't live long enough to make them all yourself.

Eleanor Roosevelt
US diplomat & reformer
1884-1962

Immunization rates of kindergarten students at school entry, KS, 2009

Figure 1 Immunization coverage rates of kindergarten students at school entry, Kansas 2009-2010.



^{*} Based on kindergarten survey from school year starting in 2009.

Childhood Immunization Coverage by State, NIS 2009

	4+DTaP	3+Polio	1+MMR	3+Hib	3+PCV	Rotavirus
USA	83.9±1.0	92.8±0.7	90.0±0.8	83.6±1.0	92.6±0.7	43.9±1.4
MO	78.4±6.2	87.5±5.5	88.8±5.0	79.9±6.2	86.1±5.9	46.9±7.1
KS	87.2±5.9	93.8±4.4	92.5±4.6	86.7±6.3	91.5±4.9	39.7±8.1
Highest	91.3±3.6		94.7±2.7	97.1±2.3	98.8±1.0	71.2±7.3
state	MI	LA	TN	NH	CT	RI
Lowest	73.1±6.6	85.8±4.8	81.8±6.0	58.8±9.7	84.5±4.9	20.9±4.7
state	AR	NV	AR	CT	NV	WA

 $\underline{http://www2a.cdc.gov/nip/coverage/nis/nis_iap2.asp?fmt=v\&rpt=tab02_antigen_iap\&releft=Q1/2009-Q4/2009}$

Even with good rates, there can be clusters of under-immunization

Estimated # - No MMR*

```
Los Angeles, CA
                                        13636 (±2576)
                                                       n = 1847
    Harris, TX
                                  11205 (±2001)
                                                       n = 2254
    Cook, IL
                               9666 (±1768)
                                                       n = 2476
  Maricopa, AZ
                                9661 (±1638)
                                                       n = 1782
                        6520 (±1087)
    Clark, NV
                                                       n = 1249
                        5946 (±1045)
   Dallas, TX
                                                       n = 1867
  San Diego, CA
                    5251 (±2324)
                                                       n = 1187
   Orange, CA
                   4841 (±2700)
                                                        n = 199
   Wayne, MI
                    4105 (±1165)
                                                       n = 1590
San Bernardino, CA 3864 (±1543)
                                                        n = 606
    Kings, NY
                   3770 (±1121)
                                                        n = 613
                   3574 (±657)
                                                       n = 1885
    Bexar, TX
 Hillsborough, FL 3212 (±1719)
                                                        n = 182
   Tarrant, TX
                  3181 (±1947)
                                                        n = 189
 Miami-Dade, FL 3040 (±683)
                                                       n = 1689
    King, WA
                  2979 (±677)
                                                        n = 1427
   Broward, FL 2440 (±1579)
                                                        n = 220
 Santa Clara, CA 2301 (±860)
                                                       n = 1278
  Alameda, CA 2207 (±1020)
                                                        n = 655
   Oakland, MI 2187 (±887)
                                                        n = 254
```

2187

13636

Number

Unvaccinated

From 2007 - 2010 no cases of confirmed measles in Kansas

- In 2011, 6 confirmed cases of measles
- ► All in the Kansas City metro area
- > All in unvaccinated children
- > 1st reported case was in 18 year old
 - Spread it to her unvaccinated siblings
 - During the investigation 3 more cases were identified in a child care facility where the 18 yr old had visited

All 3 daycare cases...

- Had onset prior to the 18 year old
- Were not old enough to be vaccinated
- Had received medical treatment (and one was hospitalized) but no one suspected measles until after the last cases in the older children were identified.

SOURCE of exposure has yet to be identified

Sometimes bridging the gap is not easy...



...or comfortable

8. An office manager is a real vaccination champion and she wants to bring her office's rates up.

Of the following, which is NOT strongly recommended by the Task Force on Community Preventive Services?

8. Which is NOT strongly recommended by the Task Force on Community Preventive Services?

- A. Client reminder or recall systems
- B. Provider reminder systems
- C. Reducing out of pocket costs
- D. Use standing orders
- E. Attend conferences and then do nothing differently when you get back to your office

8. Which is NOT strongly recommended by the Task Force on Community Preventive Services?

- A. Client reminder or recall systems
- B. Provider reminder systems
- C. Reducing out of pocket costs
- D. Use standing orders
- E. Attend conferences and then do nothing differently when you get back to your office

Patient Reminder /Recall Messages / Immunization Rates



CULVER MEDICAL GROUP READII ROCHESTER

REMEMBER

This patient is due for pneumococcal vaccine!!!

Par	tient	nai	me:

No previous vaccination

Vaccine given before 65 years and ≥ 5 years since last vaccine

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☐ Vaccine not given:

- ☐ Patient did not keep appointment
- ☐ Patient refused
- ☐ Patient previously vaccinated
- Contraindication (specify):
- ☐ Provider forgot

•What?

·Who?

•When?

Standing Orders Are Among the Most Effective Strategies

STANDING ORDER

Annual influenza immunization for all high-risk persons and other individuals who wish to reduce the likelihood of becoming ill with influenza is recommended by the Centers for Disease Control and Prevention and the Minnesota Coalition for Adult Immunization. A standing order to immunize high-risk patients, or patients not at high risk but requesting influenza immunization, and who are hospitalized or receiving services is provided below.

To Be Completed by Nurse/Pharmacist

K CATEGORY:
Patient is "High Risk" due to:
☐ Age 50 or older
☐ History of heart disease, lung disease, diabetes, or other chronic medical condition
Patient is not "High Risk"
MPLETE IF PATIENT AT "HIGH RISK" or not high-risk but requests influenza immunization:
Influenza Vaccine not indicated for this patient due to:
Previous immunization this influenza season Serious allergies to eggs Previous severe reaction to influenza vaccine Acute febrile illness Refusal of vaccine by patient because he/she:
Believes not at risk for disease Believes immunization doesn't work Fear of adverse effects Wants further advice (e.g. physician, family) Would rather receive elsewhere Other reason:
□ Not indicated for other reason (explain) □ Influenza Vaccine Indicated. Give Influenza Vaccine Information Statement and Influenza Vaccine 0.5 mLIM if 13 years or older. (If patient is 12 years or younger, contact attending MD for order and refer to Pediatric Dosing Guidelines.)
rmation Collected by Date

What: Non-MDs offer & give vaccines without direct MD involvement

How: Written policies

Where: office, hospital, residential care

INFLUENZA IMMUNIZATION ORDERS

MMWR 2000; 49 (RR-1).

TABLE 15. Recommendations regarding interventions to improve coverage of vaccines recommended for routine use among children, adolescents, and adults

Intervention	Recommendation
Increase community demand for vaccination	
Client reminder or recall systems	Strongly recommended
Multicomponent interventions, including education	Strongly recommended
Requirements for entry to schools, child-care facilities, and colleges	Recommended
Community education alone	Insufficient evidence
Clinic-based education	Insufficient evidence
Patient or family incentives or sanctions	Insufficient evidence
Client-held medical records	Insufficient evidence
Enhance access to vaccination services	
Reducing out-of-pocket costs	Strongly recommended
Enhancing access through the U.S. Department of Agriculture's Women, Infants, and Children program	Recommended
Home visits, outreach, and case management	Recommended
Enhancing access at schools	Recommended
Expanding access in health care settings	Recommended as part of multicomponent interventions only
Enhancing access at child care centers	Insufficient evidence
Focus on providers	
Reminder or recall systems	Strongly recommended
Assessment and feedback	Strongly recommended
Standing orders	Strongly recommended
Provider education alone	Insufficient evidence

Source: Adapted from Task Force on Community Preventive Services. Recommendations regarding interventions to improve vaccination coverage in children, adolescents and adults. Am J Prev Med 2000;18:92–6, and Task Force on Community Preventive Services. Recommendations to improve targeted vaccination coverage among high-risk adults. Am J Prev Med 2005;28:231–7.

9. The ACIP General Recommendations cover a host of important topics, including Timing & Scheduling and Storage & Handling as we've discussed today.

Which of the following NOT discussed in the General Recs?

9. Which is NOT discussed?

- A. Combinations
- **B.** Contraindications
- C. Route of administration
- D. Bill Atkinson's birth place
- E. Allergies
- F. Breastfeeding and pregnancy
- G. Persons vaccinated outside the US
- H. Vaccine records
- I. IIS
- J. Increasing rates
- K. Vaccine safety
- L. Communicating with parents

Like some other great works, the **General Recs** Summary is more widely owned than read.



Do we need to advertise?



Just read it.



General Recs: less bark, more wag





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Welcome to Austin-Bergstrom Int...



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AUSTIN-BERGSTROM INTERNATIONAL AIRPORT (AUS)



"Relax, you're in Austin"...



News

- April 2011 Passenger & Air Cargo traffic
- Delta Air Lines announces new Austin-Kansas City nonstop flight
- Standard & Poor's raises credit rating for Austin-Bergstrom International Airport
- Best Airports in the World honor includes Austin
- Real-time flight status at Austin





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10. Does MMR cause autism?

1. Does MMR cause autism?

- In 2004 IOM reviewed 14 available studies
 - 12 negative:
 - 9 controlled observational
 - ■3 ecological
 - 2 passive reporting (Finland)
 - 2 positive: both by Geier & Geier
 - Their conclusion: Evidence favors rejection of a causal relationship

Does MMR cause autism? (cont.)

Subsequently 2 lab studies showed no evidence of measles virus persistence in the peripheral blood mononuclear cells of children with ASD

What causes autism?

- **Genetics**
 - Identical twins; siblings
 - A gene on the X chromosome? Fragile X is a known cause
 - Deletion of 593 kb on chromosome 16p11.2
 - Brain cell communication gene
 - Father over 40
 - Certain psychiatric dxn in parent

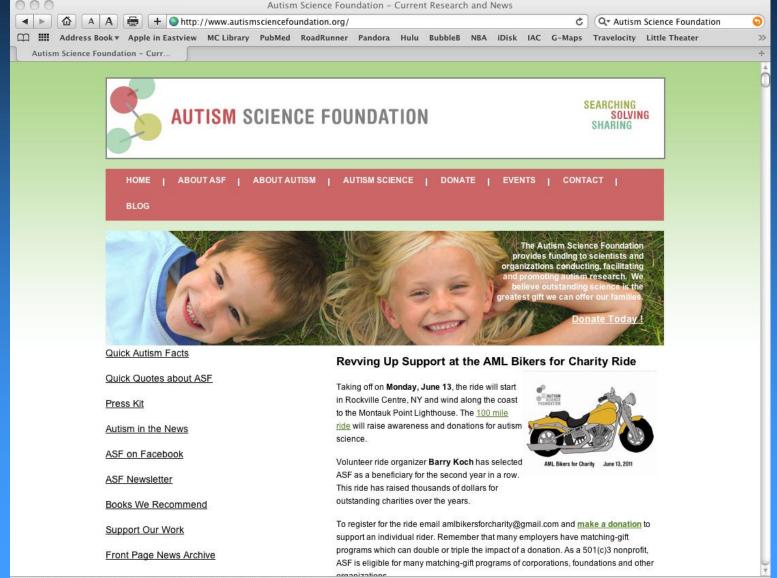
What causes autism? (continued)

- **▶** Genetics
- Prenatal insults (day 20-24 of gestation)
 - Thalidomide
 - Natural congenital rubella
 - Other possibilities: high folic acid level in father's sperm?
- ► Gestational age at birth <35 weeks

Autism appears to be based on something a child is born with

- > Abnormal brain growth
- Abnormal brain proteins as newborns
- **►** Home movie studies

Autism Science Foundation



3 errors occurred in opening the page. For more information, choose Window > Activity.

http://www.kdheks.gov/immunize/





The 2011 ACIP immunization Recommended Schedule (http://www.cdc.gov/vaccines/recs/schedules/downloads/child/2011/11_0-6yrs-schedule-pr.pdf) reflects the 2009 updated recommendations of the ACIP regarding routine poliovirus vaccination (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5830a3.htm?s_cid=mm5830a3_e). The final dose in the IPV series should be administered at age 4 years or older and the minimum interval from dose 3 to dose 4 is extended from 4 weeks to 6 months. Communication received from CDC stated that there was no recommendation to make this retroactive before August 7, 2009 when the recommendation was published. The 4 yr minimum age and 6 month minimum interval applies to current vaccination activity for

Jefferson County developed this great tool:

Immunization Requirements for the 2011 - 2012 School Year

K.A.R. 28-1-20 defines immunizations required for any individual who attends school or a childcare program operated by a school. There are changes in requirements for immunizations for the upcoming school year. Please carefully review the requirements below. The usual number of doses required are listed; however there are exceptional circumstances that could alter the number of doses a child needs. If you have questions about your child's immunization status, contact your child's primary care provider or local health department.



Proof of receiving the immunizations must be provided to the school prior to attending the first day of school.

Early Childhood Program Operated by a School Ages 4 years and Under		
Vaccine	Requirement	
DTaP/DT (diptheria, tetanus, pertussis)	4 doses	
IPV (polio)	3 doses	
MMR (measles, mumps, rubella)	1 dose	
Varicella (chickenpox)	1 dose*	
Hepatitis A	2 doses	
Hepatitis B	3 doses	
Hib (haemophilus influenza type B)	3 doses	
Prevnar (pneumococcal conjugate)	4 doses	

Kindergarten - Grade 2		
Vaccine	Requirement	
DTaP/DT (diptheria, tetanus, pertussis)	5 doses	
IPV (polio)	4 doses	
MMR (measles, mumps, rubella)	2 doses	
Varicella (chickenpox)	2 doses*	
Hepatitis B	3 doses	

Grades 3 - 6		
Vaccine	Requirement	
DTaP/DT (diptheria, tetanus, pertussis)	5 doses	
IPV (polio)	4 doses	

Grades 8 - 9		
Vaccine	Requirement	
Tdap	1 dose***	
IPV (polio)	4 doses	
MMR (measles, mumps, rubella)	2 doses	
Varicella (chickenpox)	1 dose**	
Hepatitis B	3 doses	

Grades 10 - 11		
Vaccine	Requirement	
Tdap	1 dose****	
IPV (polio)	4 doses	
MMR (measles, mumps, rubella)	2 doses	
Varicella (chickenpox)	1 dose**	
Hepatitis B	3 doses	

Grade 12		
Vaccine	Requirement	
Tdap	1 dose****	
IPV	4 doses	
MMR (measles, mumps, rubella)	2 doses	

Additional ACIP Recommended Vaccines

NOT REQUIRED for School Entry

Why are these requirements important?



All images are courtesy of the IAC Image Library



http://www.vaccineinformation.org/video/pertussis.

asp



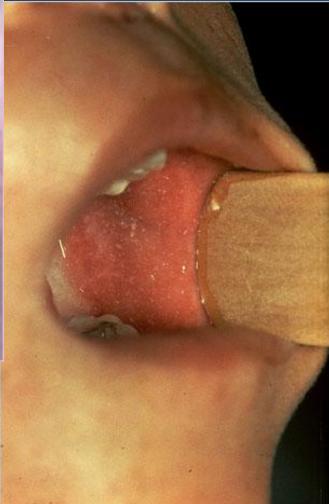


Measles

- Generalized exanthem
- Rash appears on 4th to 7th day of illness
- Classic triad of cough, coryza, conjunctivitis
- > Starting on head and progressing caudally
- Classic Koplik spots are transient and often gone by the time the rash is present
- Diagnosis is made by serology or viral culture of NP secretions

Measles (Continued)





Tetanus





Some vaccines are recommended and worth giving even though they are not required for school!

Influenza

Some vaccines are recommended and worth giving even though not required for school or daycare!

- > Influenza
- > Rotavirus



Some vaccines are recommended and worth giving even though they are not required for school!

- Influenza
- > Rotavirus
- **HPV**

Some vaccines are recommended and worth giving even though they are not required for school!



Rotavirus

HPV

>MCV4



Who is worthy of quality care?

http://www.kdheks.gov/immunize/





Kansas Department of Health and..



The Kansas Department of Health and Environment

Sam Brownback, Governor - Robert Moser, MD, Secretary Curtis State Office Building, 1000 SW Jackson, Topeka, Kansas 66612 Phone (785) 296-1500. Fax: (785) 368-6368. Email: info@kdheks.gov

Health Environment Laboratories

KDHE Home - Health - BDCP - Immunization - Immunization Manual

Immunization Manual

Kansas Department of Health and Environment Bureau of Epidemiology and Disease Prevention

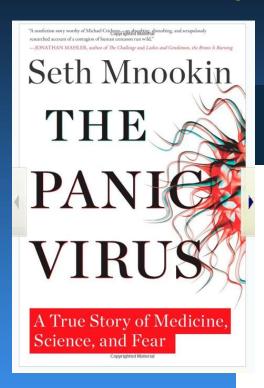


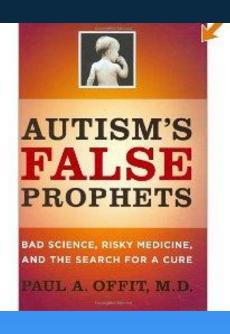
Immunization Manual



VFC Provider Info

Key Books on Vaccination





DEADLY CHOICES HOW THE ANTI-VACCINE MOVEMENT THREATENS US ALL

VACCINES

and

YOUR CHILD

Separating Fact from Fiction

Paul A, Offit, M.D.

cod Charlotte A. Moser

PAUL A. OFFIT, M.D.